

Community-associated staph infections involving antibiotic-resistant bacteria increase

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The incidence of antibiotic-resistant staph infections associated with being acquired in the community and not in health care institutions increased almost seven-fold in Chicago's Cook County Hospital system between 2000 and 2005, according to a report in the May 28 issue of Archives of Internal Medicine, one of the JAMA/Archives journals.

Methicillin-resistant Staphylococcus aureus (MRSA) infections-which do not respond to standard antibiotic treatments-are typically associated with hospitals and other health care environments. Beginning in 1998, a community-associated form of the bacteria (CA-MRSA) emerged globally, according to background information in the article. Risk factors for CA-MRSA include jail or prison time, exposure while playing certain sports, intravenous drug use, overcrowded housing, tattooing and poor hygiene. "An understanding of factors promoting acquisition and emergence of CA-MRSA may aid in the development of prevention strategies," the authors write.

Bala Hota, M.D., M.P.H., and colleagues at Rush University Medical Center and John H. Stroger Jr. Hospital of Cook County, Chicago, examined tissue, fluid and bone cultures at the 464-bed public hospital and its associated clinics between 2000 and 2005. They restricted their study to patients with infections of community onset, not hospital onset, to understand infection rates in the community; patients studied were those who did not have recent hospitalizations, MRSA infection or other

health care exposures. To determine characteristics associated with CA-MRSA, 518 community-onset cases that occurred between 2001 and 2004 were compared with 704 controls who had community-associated methicillin-susceptible *Staphylococcus aureus* (CA-MSSA), which responds to methicillin-like antibiotics.

"The incidence of CA-MRSA skin and soft tissue infections increased from 24 cases per 100,000 people in 2000 to 164.2 cases per 100,000 people in 2005," the authors write. The number of infections susceptible to antibiotics remained stable over this time, indicating that MRSA occurred in addition to and not in place of MSSA. For MRSA, "risk factors were incarceration, African-American race/ethnicity and residence at a group of geographically proximate public housing complexes; older age was inversely related."

"Why CA-MRSA has emerged at such a rapid rate remains unclear," the authors write. Hospitals and long-term care facilities have long been thought to be "epicenters" for antimicrobial resistance, promoting cross-transmission of resistant bacteria because individuals with and without the bacteria are housed at the same location. These findings suggest that prisons, public housing and other community settings also may promote cross-transmission because large at-risk populations remain together for long periods of time.

"In conclusion, among Cook County Hospital patients, the rate of CA-MRSA skin and soft tissue infections increased rapidly between 2000 and 2005, adding significantly to the overall burden of staphylococcal disease," the authors write. "Epidemiological analysis suggests that control measures could focus initially on core groups that have contributed disproportionately to risk, although CA-MRSA becomes endemic as it disseminates within communities."

Source: JAMA and Archives Journals

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